

Amendments to the Claims:

This listing will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Currently amended) A roofing product comprising a substrate coated with a top coating composition comprising wherein the top coating composition comprises:
a cured mixture of a polymeric binder, heat expandable graphite particles, a polymeric carrier and an effective amount of titanium dioxide as a pigment,
the mixture providing a coating that has the ability to char and expand when introduced to flame, has an initial energy efficiency rating greater than or equal to 0.65 for a low-sloped roof or greater than or equal to 0.25 for a steep-sloped roof, wherein said mixture has a solids content from about 50-75 wt. % with 1-10 total wt.% of the expandable graphite particles.
2. (Currently amended) The top coating composition roofing product of Claim 1 wherein the polymeric binder is a thermoplastic polymer or a thermoplastic rubber.
3. (Currently amended) The top coating composition roofing product of Claim 2 wherein the polymeric binder is a thermoplastic polymer selected from the group consisting of acrylic or methacrylic polymers or copolymers, epoxy resins, and polyvinyl acetate.
4. (Currently amended) The top coating composition roofing product of Claim 2 wherein the polymeric binder is a thermoplastic rubber selected from the group consisting of

styrene-butadiene rubbers, styrene-butadiene-styrene rubbers, styrene-ethylene-butadiene-styrene (SEBS) rubbers, styrene isoprene styrene (SIS) rubbers, and styrene butadiene rubbers.

5. (Currently amended) The top-coating composition roofing product of Claim 1 wherein the polymeric carrier is water or a hydrocarbon solvent.

6. (Currently amended) The top-coating composition roofing product of Claim 1 wherein the pigment further comprises ~~titanium dioxide~~, calcium carbonate, colemanite, aluminum trihydrate (ATH), borate compounds or mixtures thereof.

7. (Currently amended) The top-coating composition roofing product of Claim 1 wherein decomposition and release of gasses when exposed to fire causes expansion of the coating.

8. (Currently amended) The top-coating composition roofing product of Claim 1 wherein the polymeric binder and the polymeric carrier form an aqueous polymeric-based emulsion.

9. (Currently amended) The top-coating composition roofing product of Claim 1 wherein the polymeric binder and the polymeric carrier form a solvent polymeric-based emulsion.

10. (Currently amended) The top coating composition roofing product of Claim 1 wherein the polymeric binder is present in said mixture in an amount from about 5 to about 60 wt. %.

11. (Currently amended) The top coating composition roofing product of Claim 1 wherein the polymeric carrier is an acrylic polymer that is present in said mixture in an amount from about 30 to about 50 wt. %.

12. (Currently amended) The top coating composition roofing product of Claim 1 wherein the polymeric carrier is a thermoplastic rubber that is present in said mixture in an amount from about 8 to about 18 wt. %.

13. (Currently amended) The top coating composition roofing product of Claim 1 wherein the pigment is present in said mixture in an amount from about 2 to about 20 wt. %.

14. (Currently amended) The top coating composition roofing product of Claim 1 further comprising one or more optional components selected from the group consisting of dispersants, defoamers, fillers,

15. (Currently amended) A roofing product comprising a substrate coated with a top coating composition comprising wherein the top coating composition comprises:
a cured reaction product of a polymeric binder, heat expandable graphite particles, a polymeric carrier and 5.0% to 14.0% titanium dioxide as a pigment,

said cured reaction product having an initial energy efficiency rating greater than or equal to 0.65 when applied to a low-sloped roof, or an initial energy efficiency greater than or equal to 0.25 when applied to a steep-sloped roof; and further wherein the top coat will not fully char when exposed to flame and allow expansion of the graphite particles.

16-17. (Canceled)

18. (Currently amended) The roofing product of Claim 46 15 wherein ~~said the~~ substrate comprises single ply membranes, built-up roofing (BUR), modified bitumen, ethylene propylene diene monomer rubber (EPDM) or standing-seam profile.

19. (Canceled)

20. (Currently amended) The roofing product of Claim 49 18 wherein the substrate comprises composite shingles, clay, concentrate, fiber cement tile, slate, shakes, architectural profiled

21. (Currently amended) The roofing product of Claim 15 wherein the top coating composition has the ability to char when introduced to flame.